

GAO

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January 1991

# LOGISTICS SUPPORT

## Controls at Navy's Andros Island Test Range Need Improvement



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National Security and  
International Affairs Division

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January 28, 1991

The Honorable Earl Hutto  
Chairman, Subcommittee on Readiness  
Committee on Armed Services  
House of Representatives

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The Honorable Ronald V. Dellums  
Chairman, Subcommittee on  
Research and Development  
Committee on Armed Services  
House of Representatives

This report responds to your request and agreement with your staff to examine logistics support services provided at the Navy's Atlantic Undersea Test and Evaluation Center (AUTEC) at Andros Island, Bahamas, and West Palm Beach, Florida.

We reviewed major assets with significant investment costs that required considerable operation and maintenance support. Specifically, the review included the

- need for certain general purpose equipment,
- accuracy of property records,
- adequacy of inventory controls over supplies,
- adequacy of Navy oversight of contractor logistical support, and
- merits of cost-reimbursement and fixed-price contracts.

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## Background

AUTEC is the Navy's only major range supporting underwater research and development. Its mission is to provide a deep-water test and evaluation facility for measuring and tracking underwater acoustics, calibrating sonars, and supporting Navy antisubmarine requirements and undersea research and development programs. The Navy also uses the facility to provide tracking data for surface ships, submarines, aircraft, and weapons systems—functions supporting the Navy's antisubmarine warfare and undersea research and development programs. Program management is provided by the Naval Underwater Systems Center (NUSC) in Newport, Rhode Island. The General Electric Company operates the entire Andros Island base and provides both technical operations and logistics support through a cost-plus-award-fee contract. Further information on Andros Island operations is included in appendix I.

## Results in Brief

Our review disclosed the following:

- AUTEC's requirements for some general purpose equipment—air and marine craft and government vehicles—appear to exceed AUTEC's needs and may result in excess costs to the government because of their excessive numbers and low usage.
- Property records for equipment and material are inaccurate. The required annual report significantly understates plant equipment and overstates material inventory.
- Inventory controls at AUTEC are inadequate to prevent waste and abuse and the government may be incurring unnecessary costs, because an excessive supply level exists at the base. We found a 90-day supply of more frequently used inventory items when a shorter level would suffice, particularly since a weekly barge delivers supplies and daily flights go to the island.
- Navy oversight of logistics support activities is lacking because a qualified property administrator, as required by Federal Acquisition Regulations, has not been fully qualified and appointed. The need for a fully functioning property administrator is further evidenced by the problems found with equipment requirements, property accountability, and inventory controls.
- The type of contract under which General Electric operates AUTEC can play a large part in determining whether the government or the contractor assumes the greatest cost and performance risks. This is the fourth year of a 5-year cost-plus-award-fee contract, which includes logistics support. The scope of logistics support work is generally known. This condition suggests that the Navy consider a fixed-price type of contract for the logistics support portion of the work.

## Some Air and Marine Craft and Land Vehicles Exceed Needs

Our analysis of AUTEC's passenger list for two large, 30-year-old, 44-passenger aircraft as well as the current flight schedule showed that about half of those traveling to and from West Palm Beach and almost all traveling to and from Nassau were contractor employees and their dependents not in official travel status. The Navy's recent study of aircraft costs did not consider the feasibility and costs associated with acquiring medium-size passenger/cargo aircraft and contracting on an as-needed basis for occasional additional flight services.

The number of marine craft used for torpedo launch and recovery appears to be excessive. Only one craft is used at any one time for launch and recovery operations. Two other craft are maintained as backups when one would suffice.

Based on Department of Defense motor vehicle regulations, the number of motor vehicles on Andros Island exceeds AUTECH requirements. Most of these general purpose vehicles do not reach the 9,000-mile-per-year-usage requirement needed to justify their retention. In addition, the total of 99 vehicles surpasses the 63 allowed by the existing contract.

## Property and Inventory Controls Are Faulty

In the area of property control, the Department of Defense's annual report on property in the custody of the contractor was incomplete and inaccurate. Our analysis showed that the report as of September 30, 1989, understated the value of plant equipment by about \$5 million, or about 14 percent, primarily because underwater hydrophones and cabling were omitted. Moreover, the reported value of material inventory was \$12.4 million and contractor records showed a value of about \$6 million.

In the area of inventory controls, our analysis indicated that the supply level was excessive for certain items and, in other instances, supply items were not being maintained or physically secured in accordance with established procedures.

The contract requirement that a 90-day supply be maintained for inventory items that are used at least twice in a 6-month period (fast-moving items) appeared excessive because there are daily flights to the island and weekly sea transportation service. Also, when compared with the Navy's 75-day standard for ships at sea, the 90-day level seems to exceed the level needed to support mission operations. Conversely, AUTECH has run out of some items, even with a 90-day level, because established replenishment policy is not always followed.

Potential excesses also exist in some of the 23,700 items classified as "slow-moving." When a triennial physical inventory is taken, department managers are required to revalidate the need for items with no activity and return items valued over \$100 to the mainland supply center. Our sample showed that department managers were not complying with these requirements.

Bench and shop stock (frequently requisitioned consumable items and repair parts used by maintenance personnel) may also contribute to excesses in inventory because inventory records are not maintained and a policy has not been established for acquiring and retaining such stock. With no policy, unneeded levels of bench stock worth significant amounts can build up.

Medical supplies, including prescription drugs, are not adequately safeguarded. The dispensary room in which they are stored is left unlocked during the day. In our test of medical inventory items, we found that actual quantities on hand were less than stock record card balances in 9 of 12 items selected for review.

Federal Acquisition Regulations require a property administrator to oversee contract requirements and obligations related to government property. The Navy does not have a qualified property administrator assigned to the AUTEC contract to ensure that the contractor is performing logistics support functions in the most efficient manner. Consequently, the Navy does not know how effective the contractor has been in fulfilling its property management responsibilities.

Further information on these issues can be found in appendixes II and III.

## Agency and Contractor Comments and Actions

As requested by your office, we did not obtain written comments on a draft of this report. We did, however, discuss the contents of the report with the Office of the Assistant Secretary of Defense, the Department of the Navy, and contractor officials. We have incorporated their views, as appropriate. Overall, they agreed with the report's findings and plan to take corrective action or initiate assessments of the issues we raised.

In response to our concern about overstated requirements for general purpose equipment, Navy officials agreed to reevaluate the aircraft flight schedules and the need for the large planes. They reported that one of the two backup vessels we questioned has been transferred to NUSC. In addition, one of the other vessels, a service craft, has been decommissioned and will be excessed. Navy officials also stated that they plan to assess government vehicle needs at AUTEC and have asked the contractor to identify actual vehicle needs.

With respect to property management, Navy and contractor officials have agreed to take a number of actions. NUSC is presently investigating the discrepancies in the Department of Defense report of property in custody of the contractor. The officials believe that the discrepancies are either misstatements or are due to misinterpretation of instructions for preparing the report. According to contractor personnel, the material inventory discrepancy is partly due to the contractor's use of a manual

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inventory system. A contractor official told us that the inventory control system is currently being automated and should be fully computerized by 1991 and then a one-time adjustment will be made to correct the discrepancy.

With respect to inventory controls, Navy officials stated that a contract specification in the request for proposals for the new 5-year contract, to be effective in March 1992, will call for reducing the inventory level to a 75-day supply. Navy officials said that they will initiate a review of inventory control procedures that relate to deficiencies we identified in fast- and slow-moving items, medical supplies, and bench stock.

Also, Navy officials reported that a property administrator had been selected but they were waiting for a personnel classification action before filling the position.

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## Conclusions and Recommendations

Improvements in controls over the logistics support activities at AUTEC could result in significant reductions in the research and development funding necessary to support the base. Additionally, the increased operational efficiency that would result from these improvements could reduce the amount of user charges necessary to meet the costs of base operations.

We recommend that the Secretary of the Navy, through the Naval Air Systems Command, fully implement the actions that Navy and contractor officials have agreed to take in response to the deficiencies discussed in this report. More specifically, we recommend that the Secretary develop specific contractor guidance and management controls, including the appointment of a property administrator, to ensure that only adequately justified air and marine craft, motor vehicles, and material inventories are maintained and properly accounted for.

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Unless you publicly announce the contents of this report earlier, we will not distribute it until 7 days after its issue date. At that time we will send copies to all interested congressional committees; the Secretary of Defense; and the Director, Office of Management and Budget. We will also provide copies to other parties upon request.

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Please call me at (202) 275-8412 if you or your staff have any questions concerning the report. The major contributors to this report are listed in appendix VI.

A handwritten signature in cursive script, reading "Donna Heivilin". The signature is written in dark ink and is positioned above the printed name and title.

Donna M. Heivilin  
Director, Logistics Issues





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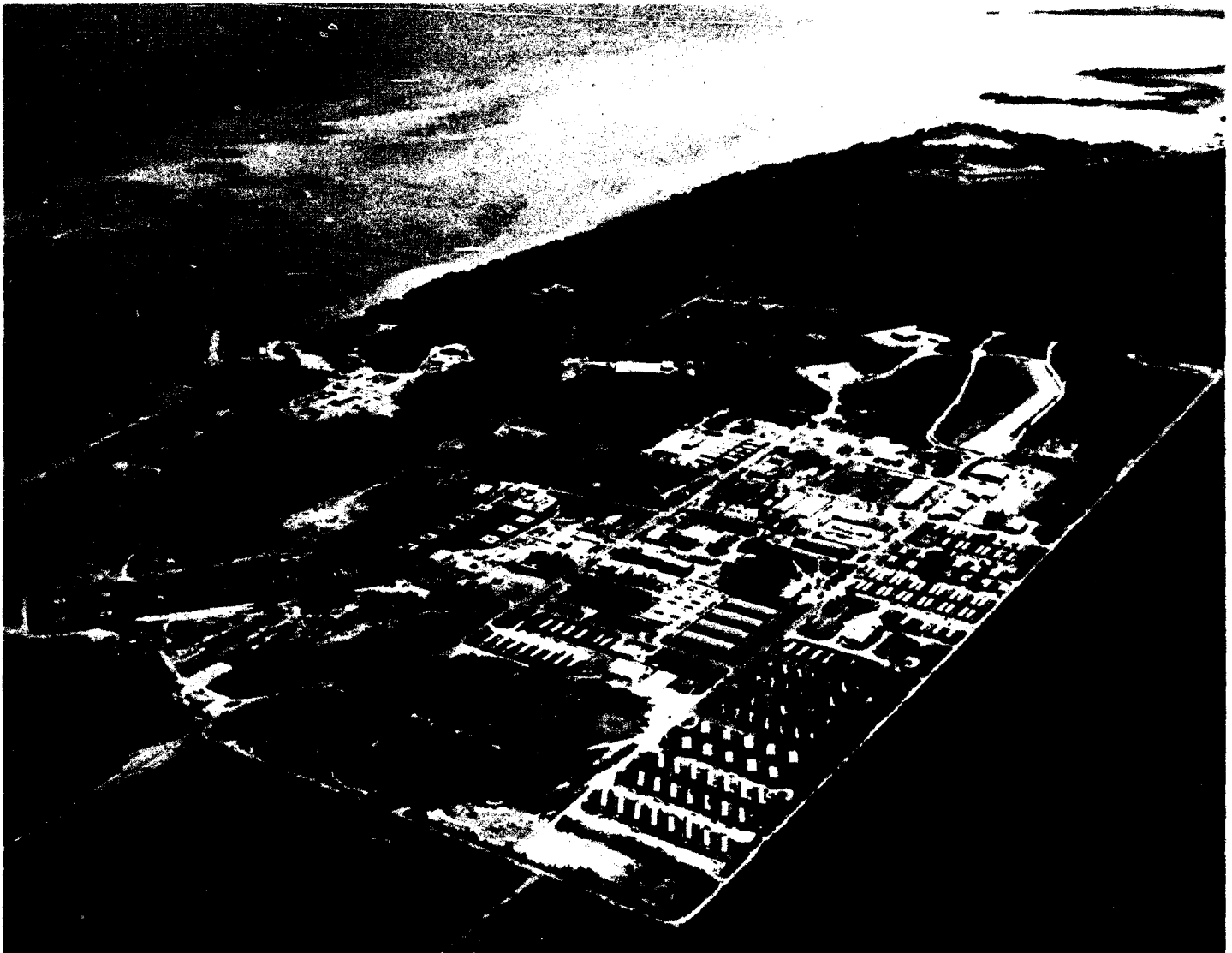
**Abbreviations**

AUTEC	Atlantic Undersea Test and Evaluation Center
GAO	General Accounting Office
NUSC	Naval Underwater Systems Center

# Background

Andros Island, the Bahamas is 100 miles long and 40 miles wide. Located on the island is the Department of Defense Atlantic Undersea Test and Evaluation Center (AUTEC), the Navy's major test range on the East Coast. Figure I.1 shows an aerial view of the AUTEC base.

**Figure I.1: Aerial View of Atlantic Undersea Test and Evaluation Center's Main Base**



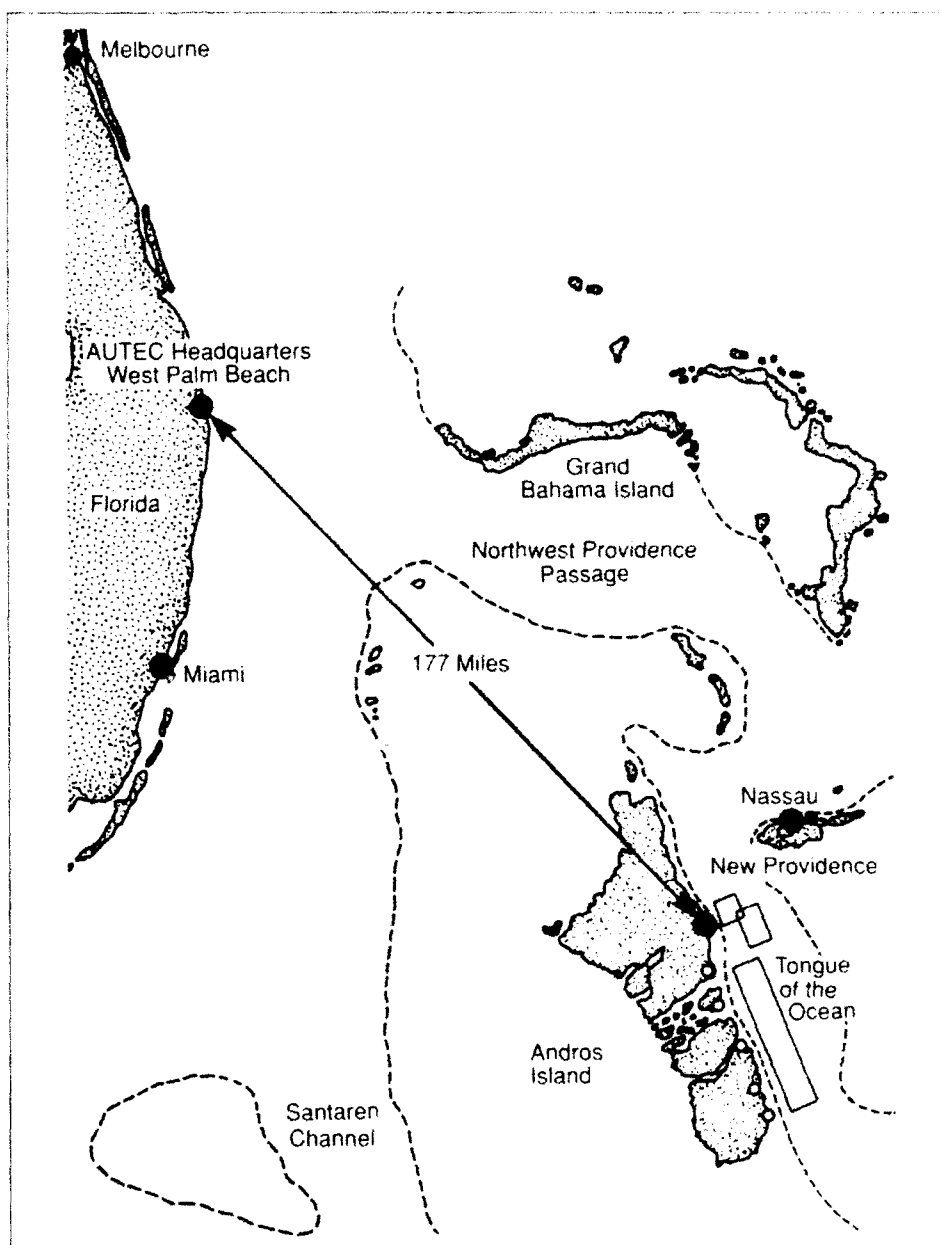
AUTEC consists of a 420-acre base (about 1-square mile) and five range sites at various locations on the island. The main section of the base is

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essentially a self-contained city, complete with housing and schools; recreational, medical, religious, cafeteria, and retail facilities; and other logistics support facilities for over 1,200 government and contractor personnel and their dependents. Logistics and other support are also provided to transient personnel using the range.

AUTEC funding for fiscal year 1990 totaled about \$79.8 million, with \$49.4 million coming from research and development funds, \$28 million from range users, and \$2.4 million from other funds. The contractor-estimated cost is \$44.8 million for the fourth year (April 1990-March 1991) of its 5-year AUTEC contract, which began in 1987. The Navy expends its funds principally at the three locations most central to AUTEC operations: Andros Island; West Palm Beach, Florida (range management); and the Naval Underwater Systems Center, Newport, Rhode Island (program management). (See fig. I.2 for a map of AUTEC.) Other expenses not included in the AUTEC budget are paid by the Naval Air Systems Command (the parent organization), including the cost of supply shipments from Cape Canaveral, the labor cost of Navy Seabee construction projects at AUTEC, and other miscellaneous expenses.

Figure I.2: The Atlantic Undersea Test  
and Evaluation Center



# Equipment Requirements May Be Overstated

## Aircraft

As required by General Electric's contract for maintaining operations at AUTECH, two 44-passenger aircraft provide 11 scheduled round-trip flights each week between West Palm Beach and Andros Island and one round-trip flight between Andros Island and Nassau. The contract further calls for about 14 supplemental flights each month to haul passengers and cargo, including expended torpedoes, between West Palm Beach and Andros Island. The annual cost to maintain, operate, and provide spare parts for these two aircraft is \$2.3 million. General Electric owns one aircraft and leases the second; as of April 1, 1990, it operated and maintained both aircraft.

To support the use of two aircraft, the contractor cited (1) the need to transport official passengers between multiple locations, (2) supplemental flight requirements, and (3) space-available nonofficial passenger travel to compensate staff and their dependents for working and living on Andros Island.

Recently, a team of Naval Underwater Systems Center (NUSC) and contractor personnel prepared an aviation cost study to explore whether two aircraft were needed on the island. This study considered the use of contracted commercial flights to haul cargo and passengers. The team concluded that current aircraft support is the most cost-effective, reliable, and flexible option it could find. However, the team did not question whether the flight schedule or stated usage requirements were reasonable and necessary. For example, the study assumed that, based on past passenger usage data, all flights require large aircraft.

Our analysis of AUTECH's passenger list revealed that about half of those traveling to and from West Palm Beach and almost all traveling to and from Nassau went on a space-available basis and were not in official travel status. If the aircraft were government-owned and government-operated, contractor personnel would be required to pay for nonofficial trips to West Palm Beach and Nassau. A NUSC official stated that passengers in nonofficial travel status are not required to reimburse the government for such travel because the contractor operates the aircraft. The mainland services manager told us that the two aircraft had been used for only about six torpedo shipments in the past year, and that marine craft are primarily used to carry expended torpedoes back to the mainland.

## Marine Craft

AUTEC is assigned 11 marine craft and has an additional vessel on loan from NUSC. These craft have a replacement cost of \$20.4 million and are used to support range operations; their use is chargeable to range users. The cost to operate and maintain these craft is \$1.9 million per year. We performed a detailed usage review of the three target and torpedo launch and recovery vessels and a selective review of the other vessels that indicated that the number of marine craft appears to be excessive. When we discussed this with the AUTEC program manager, he told us that only one of the three marine craft used for target and torpedo launch and recovery is necessary to conduct range operations. The other two are used primarily as back-ups. When one vessel is being maintained or repaired, a back-up vessel is always available as a substitute to continue range operations.

## Government Vehicles

Department of Defense regulations for management, acquisition, and use of motor vehicles and the AUTEC contract provisions set out the requirements for establishing the level of vehicle operations at AUTEC. The General Electric contract, beginning in March 1987, allows for up to 63 government (general purpose) vehicles at AUTEC, excluding buses and an ambulance. However, since the contract was signed, the contractor has continually added vehicles—principally sedans, pickup trucks, vans, and electric trucks—without providing any formal justification for their use to the Navy. As of August 1990, NUSC identified 99 government administrative vehicles on the base—far more than the 63 allowed under the contract. Maintenance costs for all of these vehicles in fiscal year 1989 totaled about \$142,000.

Department of Defense motor vehicle regulations state that government-owned vehicles at installations such as AUTEC generally must be used at least 9,000 miles per year to justify their retention. At AUTEC, vehicle usage reports showed that few government vehicles at AUTEC reach that mileage level. For example, none of the 25 electric pickup trucks and only 11 of 35 government vehicles from one vehicle pool met the mileage criteria.

The motor vehicle regulations also state that the use of expanded bus services, scooters, bicycles, and mopeds must first be considered before allowing the use of government automobiles and trucks. In addition, the regulations state that voluntary use of privately owned motor vehicles on a reimbursable basis must be considered. We found no evidence that these considerations were made and documented. For example, there are more than 400 privately owned vehicles on the base. The government



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**Appendix II**  
**Equipment Requirements May Be Overstated**

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transported these vehicles to AUTEC, without charge to government personnel and at a cost of \$20 per vehicle for contractor personnel. Bus service is also provided around the entire base every 10 minutes, from 6 a.m. until 10 p.m. every day, though the base is designed so that most people can walk to their work sites without the need for motor vehicles.

# Property Records, Inventory Controls, and Government Oversight Need to Be Improved

Internal controls are the policies and procedures managers use to ensure that agency programs and functions are effectively and efficiently carried out. Among other uses, effective internal controls safeguard resources against waste, loss, and misuse. They also ensure that reliable data are obtained, maintained, and fairly disclosed in reports used to control resources.

## Equipment and Material Records Are Inaccurate

Inaccuracies exist in the Department of Defense's "Property in the Custody of the Contractor" report. This annual report is submitted to the Defense Logistics Agency to determine the total value of government property in the hands of contractors. As of September 30, 1989, the report showed that AUTC had about \$35.4 million worth of plant equipment (excluding air and marine craft) on hand and about \$12.4 million worth of material inventory. Based on our verification of inventory records, observations, and inquiries, our review disclosed that this report contains significant inaccuracies.

For example, the report understates the value of plant equipment by about \$5 million, or about 14 percent, because it omits the cost of underwater hydrophones and cabling. Also, costs for AUTC-manufactured equipment are understated, as well as miscellaneous equipment such as trash dumpsters. We were unable to determine how much these items were understated. Further, the report states the total value of AUTC's material inventory is \$12.4 million. Contractor documentation shows the value of material inventory is about \$6 million, or about half the total included in the custody report.

## Inadequate Inventory Control Procedures

As of September 1989, AUTC's material inventory included over 26,000 separate item types, with a reported value of more than \$12.4 million. These were stored in nine warehouses, eight on Andros Island and one in West Palm Beach.

## Excessive or Inappropriate Supply Levels

For fast-moving items, the AUTC contract requires that a 90-day inventory be maintained. These are items which are used at least twice in a 6-month period. Items used less frequently are considered to be "slow-moving" items. The AUTC program manager stated that the contractual requirement for fast-moving items was based on the Navy's ship-at-sea standard, which requires the contractor to maintain a 75-day supply level of items. In figuring AUTC's requirements, the program manager

then added 15 days to the 75-day requirement to account for transportation to Andros Island. Currently, AUTEK maintains an inventory of about 2,300 fast-moving items with an estimated value of about \$546,000.

The contractor's fast-moving inventory supply levels appear to exceed the levels necessary to support mission operations. Even though the AUTEK contract requires a 90-day supply level of fast-moving items, this requirement does not consider that there are daily flights to and from Andros Island, weekly resupply barges arriving from Port Canaveral, Florida, and several vessels used to transport expended torpedo shells to the mainland that return empty to Andros Island. Our analysis indicates that the contractor could maintain less than a 90-day supply of fast-moving items without affecting base operations. The 90-day contract stipulation should be adjusted to reflect a lower requirement.

Moreover, the contractor-established policy on replenishment of fast-moving stock items is not being followed. The policy requires replenishment of fast-moving items when each item reaches a particular reorder level. During our review, we found that fast-moving stock is not always reordered in time to comply with the existing 90-day level, resulting in stock depletion. The problem appears to be in the reordering process rather than in any difficulty in obtaining required stock items from the mainland. Of 13 items we sampled, 4 had not been replenished according to the existing policy. Moreover, 8 of the 13 items had been out of stock at least once during the past year.

For slow-moving items, the contractor does not review potentially excessive levels of some 23,700 items that are drawn and used by department managers. The supply manager informed us that, according to Navy procedures, when the base's triennial physical inventory is completed, a record of stock item activity must be returned to the department manager for each stock item that has not been requested since the last inventory. The manager is then required to revalidate the need for that item and to compare stocks with requirements to decide whether the item is truly needed or whether the stock level should in fact be decreased. All inventory items valued in excess of \$100 that are not needed must be returned to the mainland military supply center.

We selected a sample of 108 AUTEK stock items to determine if revalidation requirements were being met. Our sample showed that department managers were not complying with these requirements. For example, in May 1980, a manager requested that the supply department begin stocking a \$135-generator with an estimated usage per year of five and

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a suggested stock level of one. The supply department ordered two of these items in 1980, but as of May 1990, these two items still remained in stock. The supply manager stated that a copy of the stock request had been sent back to the department manager for validation, but we found no evidence that the manager had reviewed it for revalidation.

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### Bench and Shop Stock

In addition to the supply department's normal stock levels, individual shops carry from 1- to 15-months' worth of frequently used items usually referred to as bench (or shop) stock. Bench stock, for which inventory records are generally not maintained, may contribute to material excesses in inventory records. Bench stock consists of items used daily that shop personnel would be required to obtain through more frequent trips to the supply warehouse. However, since the contractor has no policy regarding the type, number, or requirement for particular bench-stock items, department shops throughout the base can build up substantial and uncontrolled inventories of bench-stock items worth relatively large amounts.

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### Physical and Administrative Control Over Medical Supplies

Controls over the AUTECH dispensary's inventory of medical supplies (other than controlled substances) are inadequate. This inventory consists of about 700 items valued at about \$38,000. Medical supplies, including prescription drugs, are stored in a dispensary supply room, not in the supply warehouse. The dispensary supply room remains unlocked throughout the day.

To test whether actual numbers of stock differed from inventory records, we judgmentally selected 12 items from the medical supply inventory list. We found that 9 of the 12 items existed in quantities less than the amount stated on the stock record card. These items included benedryl, x-ray envelopes, ultrasound gel, and other materials. In addition, we found that the contractor generally does not investigate any discrepancies in inventory. Instead, medical stock record cards are adjusted to reflect actual numbers of stock items when inaccuracies between stock and records are found.

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## Lack of Government Oversight of Property Management

Federal Acquisition Regulations require a property administrator to oversee contract requirements and obligations related to government property. The Navy does not have a qualified property administrator assigned to the AUTC contract. The responsibilities of a property administrator include conducting property surveys to determine the contractor's compliance with federal and contractual regulations and procedures, performing consumption analyses, and evaluating inventory excesses. An AUTC property administrator has been selected, but is not completely trained or certified. To date, no surveys, consumption analyses, or evaluations of inventory excesses have been conducted by the Navy.

## Fixed-Priced and Cost-Reimbursement Contracts Offer Different Benefits

The government mostly uses two types of contracts—firm-fixed-price and cost-reimbursement—to buy goods and services from contractors. A firm-fixed-price contract places the greatest risk of performance on the contractor; the cost-reimbursement contract (or “cost-plus” contract) places the greatest cost and performance risk on the government.

Use of a firm-fixed-price contract is preferred when the risk inherent in a project is minimal or when the risk can be predicted with some high degree of certainty. The firm-fixed-price contract is an agreement by the contractor to furnish designated supplies or services at a specified price not subject to adjustments resulting from changes in performance costs. A firm-fixed-price contract can be used for research or development when there is a proper scope of work. This type of contract is the easiest and least costly of all contract types to administer.

A cost-plus contract is generally used when uncertainties exist in the scope of contracted work. It provides for payment to the contractor for allowable costs incurred. A cost-plus contract is generally used when the government has an incomplete or indefinite idea about the scope of work the contract covers. From the government's perspective, the cost-plus contract offers the contractor little or no incentive to reduce costs, since additional costs are reimbursable to the contractor.

Choosing a cost-plus contract can be unnecessarily costly to the government. The cost-plus contract requires the government to make sure the contractor has sound cost control procedures in place, and requires significant government oversight, since the contract is generally based on the actual level of services provided.

Since General Electric is in the fourth year of a 5-year contract, it is well aware of the scope of logistics activities. To date there have been few contract modifications that have substantially changed the contractor's scope of work at AUTEC with respect to logistics support. This condition suggests that a reasonable scope of work could be developed for logistics support at AUTEC that would allow consideration of a fixed-price type of contract. The Navy recently changed its “Barking Sands” Pacific Missile Range Facility contract from a cost-plus to a fixed-price contract.

## Scope and Methodology

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The Chairman, Subcommittee on Readiness, House Committee on Armed Services, joined by the Chairman, Subcommittee on Research and Development, House Committee on Armed Services, asked us to examine the effectiveness and efficiency of contractor support at major Department of Defense test and training ranges. With agreement from their staff, we selected AUTEC for our review.

We obtained and analyzed data from Navy and contractor personnel. We discussed logistics support functions with officials of the program management office at the Naval Underwater Systems Center, Newport, Rhode Island; the AUTEC Detachment Office, West Palm Beach, Florida; the AUTEC test range command office, Andros Island, the Bahamas; and the Navy procurement contracting office, Orlando, Florida. In addition, we interviewed staff from the Department of Defense Research, Engineering, Test and Evaluation group; the Naval Air Systems Command in Washington, D.C.; the Defense Contract Audit Agency; and the Defense Contract Administrative Services.

At AUTEC we obtained and analyzed contractor and NUSC logistics data and selectively tested contractor compliance with established supply procedures. This involved visiting each supply warehouse and selected shops and reconciling stock record cards with shelf stock.

We conducted our review from January through June 1990 in accordance with generally accepted government auditing standards.

# Major Contributors to This Report

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